UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,192	01/28/2000	Toshimitsu Kaneko	0039-7541-2SRD	1924

			EXAMINER
22850	7590	05/06/2004	AKHAVANNIK, HUSSEIN

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ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.		Applicant(s)
Office Action Summary	09/493,192		KANEKO ET AL.
	Examiner		Art Unit
	Hussein Akhavannik		2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-46</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-46</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>30 June 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>14</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-3, 8-10, and 15-17, see page 13, line 21 to

page 14, line 20 of the remarks, filed January 12, 2004, have been considered but are moot in

view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2.   ·   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe et al (U.S.

Patent No. 5,970,504).

Referring to claim 1, which is representative of claims 8 and 15,

i.   Extracting position data of a representative point of an approximate figure

approximating the region or a characteristic point of the region from the plurality of

frames is explained by Abe et al in column 8, lines 35-56. The left upper points and the

right lower points of each rectangular anchor region correspond to the representative

points that represent the approximate figure (anchor) approximating a region. Abe et al

illustrate that the coordinates of the representative points are stored in figure 5.

ii.   Approximating a temporal trajectory of corresponding representative points or

corresponding characteristic points of successive frames with a function of time, a

coefficient of the function being represented by a parameter is illustrated by Abe et al in

figure 6 and explained in column 8, line 57 to column 9, line 37. One (as depicted in

figure 4) or multiple (as depicted in figure 6) linear function(s) is/are determined to

represent the trajectory between two vertices of each anchor. The trajectory determined

by Abe et al is illustrated to be a function of time, as the trajectory spans multiple frames

of video. The coefficient of the linear function explained by Abe et al in column 9, line 2

to be represented by the parameter $\{A(t1) - A(t0)\}/\Delta t$.

iii.   Describing the parameter of the function as the region data is explained by Abe et

al in column 9, lines 3-15. Abe et al explain that A is substituted with the x1, y1, x2, and

y2 values, which represent the position of the left upper and right lower points of the

rectangle that represents the region data. The output of the linear function explained by

Abe et al in column 9, line 2 represents the position of the anchor in a desired frame.

Referring to claim 24, which is representative of claims 31 and 38,

i.   Extracting position data of a representative point of an approximate figure

approximating the region or a characteristic point of the region from the plurality of

frames corresponds to claim 1i.

ii.   Approximating a temporal trajectory of corresponding representative points or

corresponding characteristic points of at least three successive frames with a function, the

function being represented by a parameter is illustrated by Abe et al in figure 6 and

explained in column 8, line 57 to column 9, line 37. One (as depicted in figure 4) or

multiple (as depicted in figure 6) linear function(s) is/are determined to represent the

trajectory between two vertices of each anchor in three (or more) frames labeled as the

start frame, the middle standard frame, and the end frame. Furthermore, Abe et al

explain in column 13, lines 6-11, that a non-linear interpolation is acceptable in order to

increase the accuracy of the interpolation, but at a cost of simplicity. The coefficient of

the linear function explained by Abe et al in column 9, line 2 to be represented by the

parameter $\{A(t1) - A(t0)\}/\Delta t$.

iii.   Describing the parameter of the function as the region data corresponds to claim

1iii.

Referring to claim 2, which is representative of claims 9, 16, 25, 32, and 39, describing

information specifying a leading frame or a trailing frame of the plurality of frames as the region

data is illustrated by Abe et al in figures 5 and 6. The start frame is illustrated as frame no. 1 and

the end frame is illustrated as frame no. 100.

Referring to claim 3, which is representative of claims 10, 17, 26, 33, and 40, describing

information of the type of the approximate figure as the region data is explained by Abe et al in

column 12, line 64 to column 13, line 5.

Referring to claim 4, which is representative of claims 11, 18, 27, 34, and 41, describing

information of the number of the approximate figure as the region data is illustrated by Abe et al

in figure 8 by the anchor ID number.

Referring to claim 5, which is representative of claims 12, 19, 28, 35, and 42, describing

position data of knots of the trajectory and information specifying the trajectory used together

with position data of the knots of the trajectory is explained by Abe et al in column 8, lines 35-

56. Abe et al explain that the position of the left upper and right lower points for the rectangle

object (anchor) being tracked in the video described (as illustrated in figures 3 and 5).

Referring to claim 6, which is representative of claims 13, 20, 29, 36, and 43,

i.   A plurality of the representative points or the characteristic points being included in a certain frame is explained by Abe et al in column 8, lines 35-56. The left upper and right lower points are included in every frame for each anchor in the frame.

ii.   The region data including information specifying correspondence among a plurality of the representative points or characteristic points in the certain frame and a plurality of the representative points or characteristic points in an adjacent frame is explained by Abe et al in column 8, lines 35-56 and illustrated in figures 3 and 5. Abe et al store the coordinates of the left upper and right lower points in each start, standard, and end frame in order to interpolate the position of the anchor in frames located between these frames.

Referring to claim 7, which is representative of claims 14, 21, 30, 37, and 44, describing related information related to the object or information indicating a method of accessing the related information is illustrated by Abe et al in figure 8 by the link format and link information related to each anchor.

Referring to claim 22, which is representative of claim 45,

i.   Identification information of the object is illustrated by Abe et al in figure 5 by the anchor ID.

ii.   Information specifying a leading frame and a trailing frame of the plurality of frames is illustrated by Abe et al in figure 5 by the frame number.

iii.   Information related to the object is illustrated by Abe et al in figure 8 by the link format.

iv.   Information indicating a method of accessing the related information is illustrated by Abe et al in figure 8 by the link information.

v.   Information of the number of the approximate figure is illustrated by Abe et al in figure 8 by the anchor ID, which specifies the anchor number.

vi.   Approximate figure information which includes information of the type of the approximate figure is explained by Abe et al in column 12, line 64 to column 13, line 5.

vii.   Number information of the representative point is illustrated by Abe et al in figure 5 by the representative point numbers, given as $x1$ and $x2$ or $y1$ and $y2$.

viii.   Function data of the spline function approximating the trajectories of the representative point which includes knot information is explained by Abe et al in column 8, line 57 to column 9, line 15.

ix.   Order information of the spline function is explained by Abe et al to be one in column 8, line 57 to column 9, line 15. However, Abe et al also provide higher order functions as explained in column 13, lines 6-11.

x.   Coefficient information of the spline function is explained by Abe et al in column 9, line 2.

Referring to claim 23, which is representative of claim 46, this claim corresponds to claim 22 for characteristic points. The applicant defines characteristic points on page 69, lines 14-16 as any point, for example a corner of an object. Therefore, the left upper and right lower points explained by Abe et al may also correspond to characteristic points.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kamen et al (U.S. Patent No. 6,570,586) – To exhibit a function describing the trajectory of an object over multiple frames as explained in column 3, lines 36-62.

Nakagawa (U.S. Patent No. 5,821,946) – To exhibit a spline function describing the trajectory of an object over multiple frames of video as explained in column 4, lines 9-54.

5.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik

April 28, 2004   H.A.

BRIAN WERNER
PRIMARY EXAMINER